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(54) **Fasteners**

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EP-A1- 1 902 695
WO-A1-2012/015025

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Description

Field of the invention

[0001] The present invention relates to fasteners, webs comprising a plurality of such fasteners which are successively arranged, and absorbent articles comprising at least one of such fasteners.

Background of the invention

[0002] Some male incontinence guards, such as those sold under the trade name Tena for Men (TM) level 1 or level 2, have a body side liner, an outer liner and an absorbent pad disposed therebetween. The guard is generally triangular shaped when laid out flat. The base of the triangle is worn closer to the waist of the user, while the point of the triangle is positioned more towards the area between the legs of the user. This shape of article is more comfortable for the wearer and offers liquid retention benefits. The outer liner has fastening elements in the form of rectangular strips of adhesive tape attached to it that are covered by a release liner. To wear, the release liner is peeled away and the adhesive strips serve to removably fix the guard in position on the underpants of the wearer. Alternative shapes for the adhesive tapes may be desirable that provide improved fastening coverage for such triangular-shaped absorbent articles. Such alternative shapes would optimally maintain material use efficiency (lack of waste trimmings) of rectangular strips.

[0003] EP 1 902 695, EP 1 452 158 and WO 2012/015025 each disclose continuous webs of material bearing fastening portions from which a fastener may be cut.

Summary of the invention

[0004] It has been found that it may be desirable to form a Y-shape fastener or the like. Such a Y-shape is defined by two opposing arms which are separated from each other by a recess, and by a third arm extending in extension of and away from said recess. Such a Y-shape will provide coverage of the corner portions of a triangle shaped guard by a single fastening element.

[0005] A problem with cutting a complex shape such as a Y-shape or the like is that it involves a significant amount of waste material as a result of a nesting mismatch in adjacent elements. Stamping such complex shapes out of a web of material results in too much waste for production efficiency purposes. Accordingly, it would be desirable to provide a fastener that can be produced with reduced waste.

[0006] In order to solve this object, the present invention provides a fastener comprising a flexible planar backing and a fastening element on its upper side and/or on its lower side, wherein the fastener has at least one generally Y-shaped one-piece section defined by two opposing arms, which are separated from each other by a recess, and by a third arm joined to the two opposing arms and extending away from said recess, wherein the shape and size of said third arm correspond to the shape and size of said recess. This construction allows for successive fasteners to be stamped out of a web of material without producing any waste.

[0007] The outer edges of the opposing arms preferably extend parallel to each other. Accordingly, the elements can be stamped out of a strip or roll of web material having parallel side edges.

[0008] The recess as well as the third arm may have any shape, e. g. a generally rectangular, or triangular, polygonal, generally curved such as, e.g., semi-circular, and/or exhibit a more complex contour. This reduces the complexity of the stamping tool.

[0009] The bottom of the recess, as well as the free corresponding end of the third arm, may comprise a widened portion. Such a widened portion improves the attachment of the free end of the third arm of fastener to an article, such as an absorbent article.

[0010] According to one aspect of the present invention the backing is made of flexible thermoplastic resin, in particular resiliently flexible thermoplastic resin so that the fastener can easily conform to the shape of the article to which the fastening element is affixed.

[0011] Preferably each fastener element is chosen from the group comprising hook members of a hook and/loop fastener, loop members of a hook-and-loop fastener and/or an adhesive coating.

[0012] According to one aspect of the present invention the fastener consists of a plurality of adjacently arranged Y-shaped sections formed as a single piece, wherein one of the opposing arms of a first Y-shaped section also forms one of the opposing arms of an adjacent Y-shaped section.

[0013] Moreover, the present invention provides a web comprising a plurality of successively arranged fasteners of the above-mentioned type, wherein the fasteners are completely cut out apart from bridging segments which connect adjacent fasteners with each other. Such webs can be delivered to a producer of articles, such as absorbent articles, where the single fasteners are severed from the web and fixed to the articles.

[0014] In one embodiment, the web is in the form of a strip. This simplifies further processing.

[0015] In an alternative embodiment, the web is in the form of a roll in order to facilitate the transport and packaging of the web.

[0016] Furthermore, the present invention provides an absorbent article comprising at least one fastener of the above-mentioned type.

[0017] Moreover, the present invention relates to a method of providing a plurality of individual fasteners according to the present invention comprising the steps of

- providing a web of pre-cut fasteners which are completely cut out apart from severable bridging ele-

ments, and

- individualizing said fasteners from said web by severing said bridges.

[0018] The present invention also relates to a method of making absorbent articles comprising the steps of

- providing a web of absorbent articles,
- providing a plurality of fasteners according to the present invention, and
- applying said fasteners to said absorbent articles.

[0019] The present invention provides for an essentially waste-less method of providing integral fasteners. The fasteners of the present invention exhibit when applied to absorbent articles such as diapers, feminine hygiene articles such as feminine napkins or male incontinence guards, respectively, an improved stress distribution and/or an improved flexibility thereby distinctly improving the performance of the absorbent article.

Brief description of the figures

[0020]

Figure 1 is a plan view of a web, from which a web of fasteners according to an embodiment of the present invention is produced;

Figure 2 is a side view of the web in Figure 1;

Figure 3 is a web of fasteners, according to a first embodiment of the present invention, produced from the web in Figures 1 and 2;

Figure 4 is a plan view of a web of fasteners, according to a second embodiment of the present invention, produced from the web in Figures 1 and 2;

Figure 5 is a plan view of a web of fasteners, according to a third embodiment of the present invention, produced from the web in Figures 1 and 2;

Figure 6 is a plan view of another web;

Figure 7 is a side view of the web in Figure 6;

Figure 8 is a plan view of a web of fasteners, according to a fourth embodiment of the present invention, produced from the web in Figures 6 and 7;

Figure 9 is a bottom view of an absorbent article according to an embodiment of the present invention;

Figure 10 is a sectional side view of the absorbent article in Figure 9 and

Figure 11 is a front view of another absorbent article according to the present invention.

Figure 12 is a front view of another embodiment of an absorbent article according to the present invention.

Figure 13 is a top view on a web according to the present invention illustrating a process of individualizing fasteners from said web.

Detailed description of preferred embodiments of the invention

[0021] Figures 1 and 2 show a strip of web 1 with parallel side edges from which fasteners according to the present invention may be produced. The web 1 comprises a flexible planar backing 2, which is made of a flexible thermoplastic resin, in particular resiliently flexible thermoplastic resin. The upper side and the lower side of the backing 2 may both be provided with a fastening element 3 and 4 each chosen independently from each other from a group comprising hook members of a hook-and-loop fastener, loop members of a hook-and-loop fastener or an adhesive coat. For example, the fastening element 3 on the upper side of the backing 2 may be an adhesive coat, which may be covered by a release liner even though not shown here, and the fastening element 4 on the lower side of the backing 2 comprises a plurality of hook members of a hook-and-loop fastener, each hook member having a stem portion and may have a head portion, wherein the hook members are capable of being engaged with corresponding loop members of a hook-and-loop fastener or directly with garment like underwear. The web 1 can be supplied in roll form.

[0022] Figure 3 shows a web of fasteners 5, according to a first embodiment of the present invention, which can be produced from the precursor web shown in Figures 1 and 2 by means of die cuttingor the like whereby the fasteners remain severably connected via bridging segments 11. Accordingly, also the web of fasteners 5 comprises the backing 2, the fastening element 3 and the optional fastening element 4. The web of fasteners 5 comprises a plurality of successively arranged fasteners 6, wherein each fastener 6 consists of one generally Y-shaped one-piece section. This Y-shaped one-piece section is defined by two opposing arms 7 and 8 which are separated from each other by a recess 9, and by a third arm 10 joined to the two opposing arms 7 and 8 and extending away from said recess 9, wherein the shape and size of said third arm 10 correspond to the shape and size of said recess 9. The arms 7 and 8 extend parallel to each other, and the recess 9 as well as the third arm 10 have a generally rectangular contour. Each fastener 6 is completely cut out from the web 1 apart from

bridging segments 11, which connect adjacent fastener 6 with each other, so that the web of fasteners 5 still forms a continuous strip. The bridging elements can be formed, for example, by perforations or other weakening lines.

[0023] Figure 4 shows a web of fasteners 12, according to a second embodiment of the present invention, which is made from the web 1 in Figures 1 and 2 by means of die-cutting or the like. Accordingly, also the web of fasteners 12 comprises a backing 2, a fastening element 3 and an optional fastening element 4. Similar to the web of fasteners 5 in Figure 3 the web of fasteners 12 in Figure 4 comprises a plurality of successively arranged fasteners 13, wherein each fastener 13 consists of a single generally Y-shaped one-piece section. Each generally Y-shaped one-piece section is defined by two opposing arms 14 and 15, which are separated from each other by a recess 16, and by a third arm 17 joined to the two opposing arms 14 and 15 and extending away from the recess 16, wherein the shape and size of said third arm 17 correspond to the shape and the size of the recess 16. The arms 14 and 15 extend parallel to each other. The recess 16 as well as the arm 17 generally essentially have a key-hole type contour wherein the bottom of the recess 16 as well as the free corresponding end of the third arm 17 comprise a widened portion 18 of generally circular shape as shown in the figures. Other shapes such as essentially rectangular, triangular, polygonal, generally curved such as, e.g., semi-circular and combinations of the aforementioned shapes are also conceivable. Each fastener 13 is completely cut out apart from bridging segments 19, which connect adjacently arranged fasteners 13 with each other.

[0024] Figure 5 shows a web of fasteners 20, according to a third embodiment of the present invention, which is made from the web 1 in Figures 1 and 2 by means of die cutting or the like. Accordingly the web of fasteners 20 also comprises a backing 2 as well as a fastening element 3 and an optional fastening element 4. The web of fasteners 20 has a plurality of successively arranged fasteners, wherein each fastener 21 consists of two generally Y-shaped sections formed as single piece. The first Y-shaped section is defined by two opposing arms 22 and 23, which are separated from each other by a recess 24, and by a third arm 25 joined to the two opposing arms 22 and 23 and extending away from said recess 24, wherein the shape and size of said third arm 25 correspond to the shape and size of said recess 24. The second Y-shaped section is defined by two opposing arms 23 and 26, which are also separated from each other by a recess 27, as well as by an arm 28 joined to the two opposing arms 22 and 23 and extending away from said recess 27, wherein the shape and size of said arm 28 correspond to the shape and size of said recess 27. Accordingly, one of the opposing arms of the first Y-shaped section also forms one of the opposing arms of the adjacent Y-shaped section, namely the arm 23. The fasteners 21 are completely cut out apart from bridging segments 29, which connect adjacent fasteners 21 with each other.

[0025] It should be noted that the number of Y-shaped sections forming one fastener 21 can be varied as needed.

[0026] Figures 6 and 7 show a web 30 comprising a flexible planar backing 31 made of a flexible thermoplastic resin, in particular resiliently flexible thermoplastic resin. The backing 31 is provided on its upper side and on its lower side with fastening elements 32 and 33, each chosen from the group comprising hook members of a hook-and-loop fastener, loop members of a hook-and-loop fastener or an adhesive coat. In contrast to the web 1 in Figures 1 and 2, the side edges of the web 30 may not be straight lines but have a regular or irregular curved form such as a sinusoidal form and/or regular or irregular polygonal form such as saw-tooth or zig-zag form.

[0027] Figure 8 shows a web of fasteners 34, according to a fourth embodiment of the present invention, which is made from the web 30 in Figures 6 and 7. The web of fasteners 34 comprises a plurality of successively arranged fasteners 36. The form and shape of each fastening element 36 generally correspond to the shape and size of the fasteners 6 in Figure 3, for which reason same reference numerals are used for corresponding features. However, in contrast to the fastener 6 shown in Figure 3, the sides 7, 8 of the fastener 36 are waved due to the wave form of the starting web 30 in Figure 6.

[0028] Figures 9 and 10 show an absorbent article 38 according to a first embodiment of the present invention, which defines a male incontinence guard. The absorbent article 38 comprises a body side liner 39 (not shown), an outer liner 40 and an absorbent pad 41 disposed therebetween. The absorbent article 38 has a narrow portion 42 and a wide portion 43 when laid out flat. The wide portion 43 is worn closer to the waist of the user, while the narrow portion 42 is positioned more towards the area between the legs of the user. This shape of the absorbent article 38 is comfortable for the wearer and offers liquid retention benefits. On the outer liner 40 a fastener 6 of the type shown in Figure 3 is attached. More precisely, an adhesive fastening element 4, after peeling off an optional release liner, is affixed to the outer liner 40, such that a hook-type fastening element 3 faces outwards in order to removably fix the absorbent article 38 in position on the underpants of a wearer.

[0029] Figure 11 shows another absorbent article 44 according to an embodiment of the present invention, which defines a conventional diaper for an infant. The general configuration of such a diaper is already known in the art, wherefore it is not described in detail here. Fasteners 6 of the kind shown in Figure 3 are affixed to elastic strips 45 of the diaper 44, such that hook members of the fastening elements 4 face outward to be brought into contact with corresponding loop members 46 affixed to the absorbent article 44. Accordingly, the diaper can be opened and closed by means of the hook-and-loop fasteners.

[0030] Figure 12 shows a diaper as a further embodi-

ment of an absorbent article 44 according to the present invention. It is similar to the embodiment of Fig. 11 but differs in that an elastic fastening tap 47 is attached to the elastic strips 45 wherein the fastener 6 is attached to both the elastic strips 45 and the additional fastening tab 47.

[0031] Fig. 13 illustrates the method of separating individual fasteners 6 from the web 1 of fasteners 6. In the web 1 the fasteners 6 are completely cut out apart from severable bridging segments 11. The fasteners 6 are individualized by breaking up the bridging elements 11 thereby severing the individual fastener 6 from the remainder of the web 1.

Claims

1. A fastener (6; 13; 21, 36) comprising a flexible planar backing (2; 31) provided with a fastener element (3, 4; 32, 33) on its upper side and/or on its lower side, **characterized in that** the fastener (6; 13; 21; 36) consists of at least one generally Y-shaped one-piece section defined by two opposing arms (7, 8; 14, 15; 22, 23, 26), which are separated from each other by a recess (9; 16; 24, 27), and by a third arm (10; 17; 25, 28) joined to the two opposing arms (7, 8; 14, 15; 22, 23, 26) and extending away from said recess (9; 16; 24, 27), wherein the shape and size of said third arm (10; 17; 25, 28) correspond to the shape and size of said recess (9; 16; 24; 27).

2. The fastener (6; 13; 21) according to claim 1, wherein the outer edges of the opposing arms (7, 8; 14, 15; 22, 23, 26) extend parallel to each other.

3. The fastener (6; 13; 21; 36) according to one of the foregoing claims, wherein the recess (9; 16; 24, 27) as well as the third arm (10; 17; 25, 28) generally have a generally rectangular contour.

4. The fastener (13) according to one of the foregoing claims, wherein the recess (16) has a bottom and the third arm (17) has a corresponding free end, said bottom of the recess and free corresponding end of the third arm each comprising a widened portion (18).

5. The fastener (6; 13; 21; 36) according to one of the foregoing claims, wherein the backing (2; 31) is made of a flexible thermoplastic resin.

6. The fastener (6; 13; 21; 36) according to one of the foregoing claims, wherein each fastening element (3, 4; 32, 33) is selected from the group comprising hook members of a hook-and-loop fastener, loop members of a hook-and-loop fastener and an adhesive coat.

7. The fastener (21) according to one of the foregoing claims, wherein the element consists of a plurality of adjacently arranged Y-shaped sections formed as a single piece, wherein one of the opposing arms (23) of a first Y-shaped section also forms one of the opposing arms (23) of an adjacent Y-shaped section.

8. A web of fasteners (5; 12; 20; 34) comprising a plurality of successively arranged fasteners (6; 13; 21; 36) according to one of the foregoing claims, wherein the fasteners (6; 13; 21; 36) are completely cut out apart from severable bridging segments (11; 19; 29), which connect adjacent fasteners (6; 13; 21; 36) with each other.

9. The web of fasteners (5; 12; 20; 34) according to claim 8, wherein the web is a strip.

10. A roll of fasteners (5; 12; 20; 34) according to claims 8 and 9.

11. Absorbent article (38; 44) comprising at least one fastener according to one of the claims 1 to 7.

12. Method of providing a plurality of individual fasteners according to any of claims 1 -7, the method comprising the steps of

    - providing a web of fasteners (5; 12; 20; 34) comprising a plurality of successively arranged fasteners (6; 13; 21; 36) according to one of the claims 1 to 7, wherein the fasteners (6; 13; 21; 36) are completely cut out apart from severable bridging segments (11; 19; 29), which connect adjacent fasteners (6; 13; 21; 36) with each other, and
    - individualizing said fasteners by severing them from said web.

13. Method of providing a plurality of individual fasteners according to claim 12, wherein the web is a strip.

14. Method of making absorbent articles comprising at least one fastener according to any of claims 1 - 7, the method comprising the steps of

    - providing a web of absorbent articles,
    - providing a plurality of fasteners according to any of claims 1 - 7, and
    - applying said fasteners to said absorbent articles.

Patentansprüche

1. Befestigung (6; 13; 21, 36), umfassend eine flexible, ebene Verstärkung (2; 31), die an ihrer Oberseite und/oder ihrer Unterseite mit einem Befestigungse-

lement (3, 4; 32, 33) versehen ist, **dadurch gekennzeichnet, dass** die Befestigung (6; 13; 21; 36) aus mindestens einem im Allgemeinen Y-förmigen einstückigen Abschnitt besteht, der durch zwei einander gegenüberliegende Arme (7, 8; 14, 15; 22, 23, 26) definiert ist, die voneinander durch eine Vertiefung (9; 16; 24, 27) getrennt sind, und durch einen dritten Arm (10; 17; 25, 28), der mit den beiden einander gegenüberliegenden Armen (7, 8; 14, 15; 22, 23, 26) verbunden ist und von der Vertiefung (9; 16; 24, 27) weg verläuft, wobei die Form und die Größe des dritten Arms (10; 17; 25, 28) der Form und der Größe der Vertiefung (9; 16; 24; 27) entsprechen.

2. Befestigung (6; 13; 21) nach Anspruch 1, wobei die Außenkanten der einander gegenüberliegenden Arme (7, 8; 14, 15; 22, 23, 26) parallel zueinander verlaufen.

3. Befestigung (6; 13; 21; 36) nach einem der vorstehenden Ansprüche, wobei die Vertiefung (9; 16; 24, 27) sowie der dritte Arm (10; 17; 25, 28) im Allgemeinen eine im Allgemeinen rechteckige Kontur aufweisen.

4. Befestigung (13) nach einem der vorstehenden Ansprüche, wobei die Vertiefung (16) einen Boden aufweist und der dritte Arm (17) ein entsprechendes freies Ende aufweist, wobei der Boden der Vertiefung und das freie entsprechende Ende des dritten Arms jeweils einen verbreiterten Abschnitt (18) umfassen.

5. Befestigung (6; 13; 21; 36) nach einem der vorstehenden Ansprüche, wobei die Verstärkung (2; 31) aus einem flexiblen thermoplastischen Harz hergestellt ist.

6. Befestigung (6; 13; 21; 36) nach einem der vorstehenden Ansprüche, wobei jedes Befestigungselement (3, 4; 32, 33) ausgewählt ist aus der Gruppe bestehend aus einem Klettverschluss, Schlaufenelementen eines Klettverschlusses und einer Haftschicht.

7. Befestigung (21) nach einem der vorstehenden Ansprüche, wobei das Element aus einer Vielzahl von benachbart angeordneten Y-förmigen Abschnitten, die einstückig ausgebildet sind, besteht, wobei einer der einander gegenüberliegenden Arme (23) eines ersten Y-förmigen Abschnitts auch einen der einander gegenüberliegenden Arme (23) eines benachbarten Y-förmigen Abschnitts bildet.

8. Bahn von Befestigungen (5; 12; 20; 34), umfassend eine Vielzahl von hintereinander angeordneten Befestigungen (6; 13; 21; 36) nach einem der vorstehenden Ansprüche, wobei die Befestigungen (6; 13; 21; 36) vollständig ausgeschnitten sind, abgesehen von trennbaren Brückensegmenten (11; 19; 29), die benachbarte Befestigungen (6; 13; 21; 36) miteinander verbinden.

9. Bahn von Befestigungen (5; 12; 20; 34) nach Anspruch 8, wobei es sich bei der Bahn um einen Streifen handelt.

10. Rolle von Befestigungen (5; 12; 20; 34) nach Anspruch 8 und 9.

11. Absorbierender Artikel (38; 44), umfassend mindestens eine Befestigung nach einem der Ansprüche 1 bis 7.

12. Verfahren zum Bereitstellen einer Vielzahl von einzelnen Befestigungen nach einem der Ansprüche 1 bis 7, wobei das Verfahren folgende Schritte umfasst:

- Bereitstellen einer Bahn von Befestigungen (5; 12; 20; 34), die eine Vielzahl von nacheinander angeordneten Befestigungen (6; 13; 21; 36) nach einem der Ansprüche 1 bis 7 umfasst, wobei die Befestigungen (6; 13; 21; 36) vollständig ausgeschnitten sind, abgesehen von trennbaren Brückensegmenten (11; 19; 29), die benachbarte Befestigungen (6; 13; 21; 36) miteinander verbinden, und
- Vereinzeln der Befestigungen durch deren Abtrennen von der Bahn.

13. Verfahren zum Bereitstellen einer Vielzahl von einzelnen Befestigungen nach Anspruch 12, wobei es sich bei der Bahn um einen Streifen handelt.

14. Verfahren zum Herstellen von absorbierenden Artikeln, die mindestens eine Befestigung nach einem der Ansprüche 1 bis 7 umfassen, wobei das Verfahren folgende Schritte umfasst:

- Bereitstellen einer Bahn von absorbierenden Artikeln,
- Bereitstellen einer Vielzahl von Befestigungen nach einem der Ansprüche 1 bis 7, und
- Anbringen der Befestigungen an den absorbierenden Artikeln.

Revendications

1. Fixation (6 ; 13 ; 21, 36) comprenant un support plan flexible (2 ; 31) pourvu d'un élément de fixation (3, 4 ; 32, 33) sur son côté supérieur et/ou sur son côté inférieur, **caractérisé en ce que** la fixation (6 ; 13 ; 21 ; 36) est constituée d'au moins une section d'un seul tenant généralement en forme de Y définie par

deux bras opposés (7, 8 ; 14, 15 ; 22, 23, 26), qui sont séparés l'un de l'autre par un évidement (9 ; 16 ; 24, 27), et par un troisième bras (10 ; 17 ; 25, 28) joint aux deux bras opposés (7, 8 ; 14, 15 ; 22, 23, 26) et s'étendant à l'écart dudit évidement (9 ; 16 ; 24, 27), dans lequel la forme et la taille dudit troisième bras (10 ; 17 ; 25, 28) correspondent à la forme et à la taille dudit évidement (9 ; 16 ; 24 ; 27).

2. Fixation (6 ; 13 ; 21) selon la revendication 1, dans laquelle les bords externes des bras opposés (7, 8 ; 14, 15 ; 22, 23, 26) s'étendent parallèles les uns aux autres.

3. Fixation (6 ; 13 ; 21 ; 36) selon l'une des revendications précédentes, dans laquelle l'évidement (9 ; 16 ; 24, 27) ainsi que le troisième bras (10 ; 17 ; 25, 28) ont généralement un contour généralement rectangulaire.

4. Fixation (13) selon l'une des revendications précédentes, dans laquelle l'évidement (16) possède un fond et le troisième bras (17) possède une extrémité libre correspondante, ledit fond de l'évidement et l'extrémité libre correspondante du troisième bras comprenant chacun une partie élargie (18).

5. Fixation (6 ; 13 ; 21 ; 36) selon l'une des revendications précédentes, dans laquelle le support (2 ; 31) est constitué d'une résine thermoplastique flexible.

6. Fixation (6 ; 13 ; 21 ; 36) selon l'une des revendications précédentes, dans laquelle chaque élément de fixation (3, 4 ; 32, 33) est choisi dans le groupe comprenant des éléments de crochet d'une fixation à crochets et boucles, des éléments de boucle d'une fixation à crochets et boucles et une couche adhésive.

7. Fixation (21) selon l'une des revendications précédentes, dans laquelle l'élément est constitué d'une pluralité de sections en forme de Y disposées de manière adjacente, formées en tant que pièce unique, où un des bras opposés (23) d'une première section en forme de Y forme également un des bras opposés (23) d'une section en forme de Y adjacente.

8. Bande de fixations (5 ; 12 ; 20 ; 34) comprenant une pluralité de fixations disposées successivement (6 ; 13 ; 21 ; 36) selon l'une des revendications précédentes, dans laquelle les fixations (6 ; 13 ; 21 ; 36) sont complètement découpées en dehors des segments de pont détachables (11 ; 19 ; 29), qui relient des fixations adjacentes (6 ; 13 ; 21 ; 36) les unes aux autres.

9. Bande de fixations (5 ; 12 ; 20 ; 34) selon la revendication 8, où la bande est un ruban.

10. Rouleau de fixations (5 ; 12 ; 20 ; 34) selon les revendications 8 et 9.

11. Article absorbant (38 ; 44) comprenant au moins une fixation selon l'une des revendications 1 à 7.

12. Procédé de fourniture d'une pluralité de fixations individuelles selon l'une quelconque des revendications 1 à 7, le procédé comprenant les étapes consistant à

- fournir une bande de fixations (5 ; 12 ; 20 ; 34) comprenant une pluralité de fixations disposées successivement (6 ; 13 ; 21 ; 36) selon l'une des revendications 1 à 7, où les fixations (6 ; 13 ; 21 ;36) sont complètement découpées en dehors des segments de pont détachables (11 ; 19 ; 29), qui relient des fixations adjacentes (6 ; 13 ; 21 ; 36) les unes aux autres, et
- individualiser lesdites fixations en les coupant de ladite bande.

13. Procédé de fourniture d'une pluralité de fixations individuelles selon la revendication 12, dans lequel la bande est un ruban.

14. Procédé de fabrication d'articles absorbants comprenant au moins une fixation selon l'une quelconque des revendications 1 à 7, le procédé comprenant les étapes consistant à

- fournir une bande d'articles absorbants,
- fournir une pluralité de fixations selon l'une quelconque des revendications 1 à 7, et
- appliquer lesdites fixations auxdits articles absorbants.

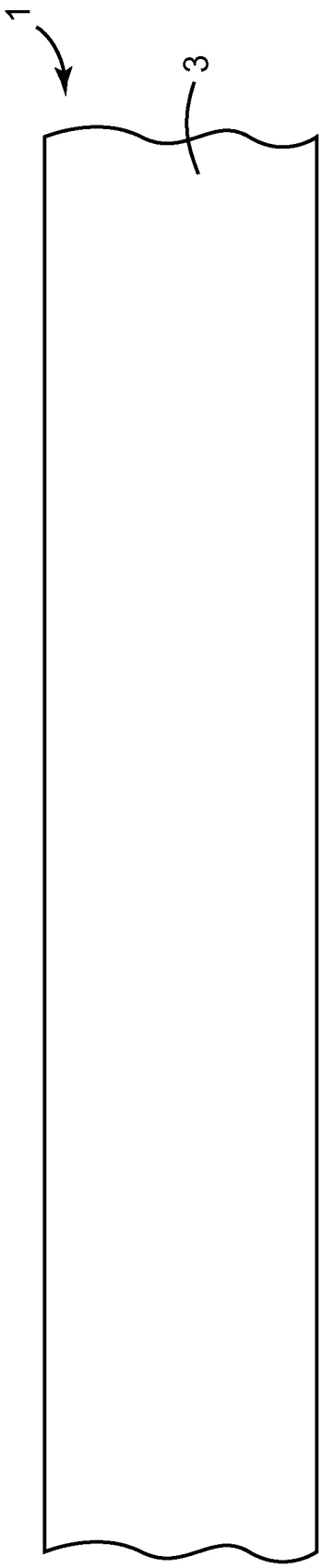

FIG. 1

FIG. 2

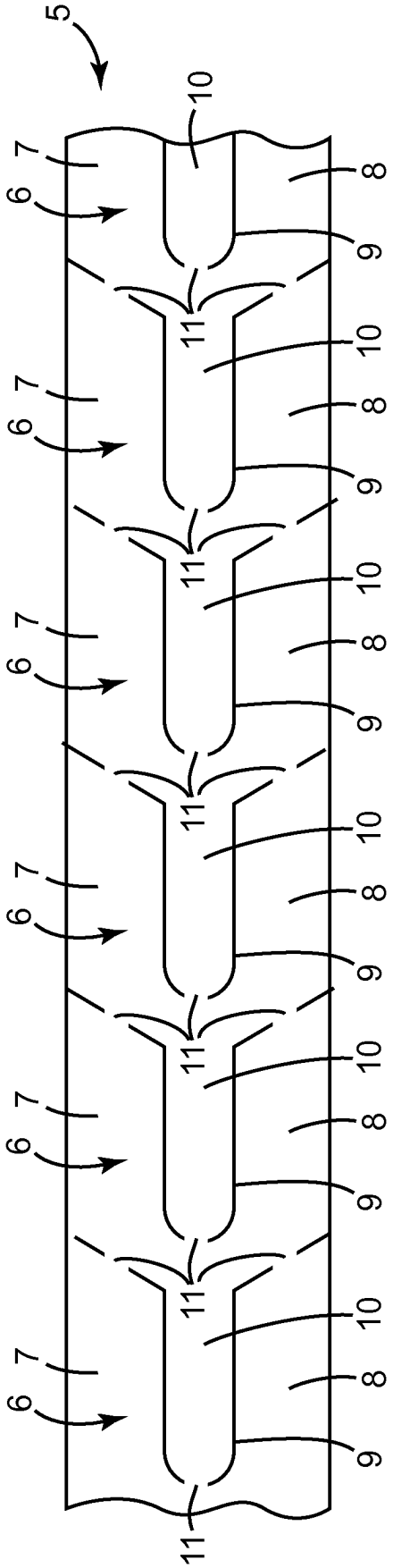

FIG. 3

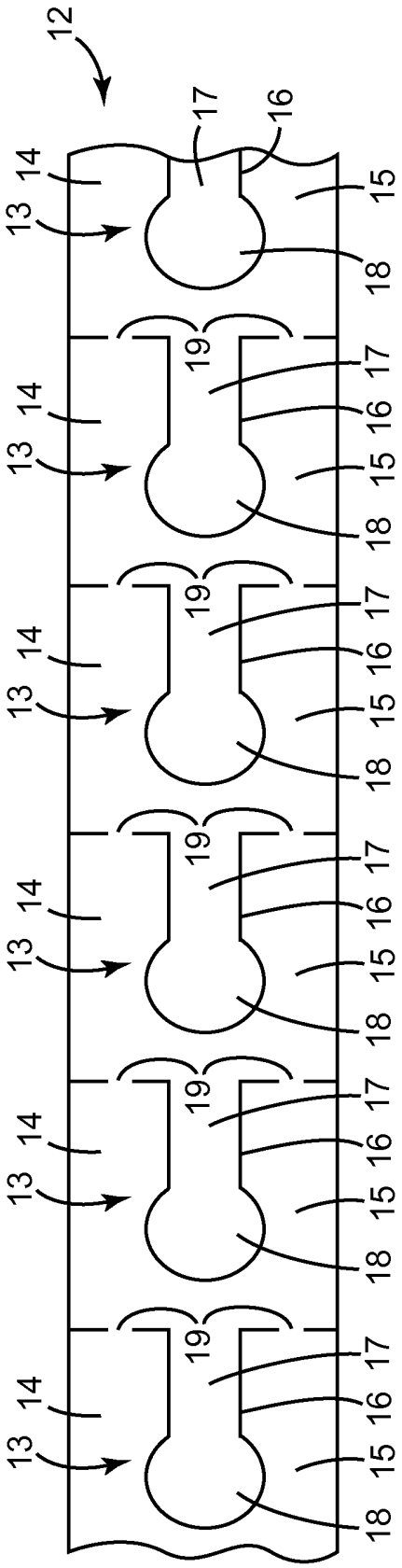

FIG. 4

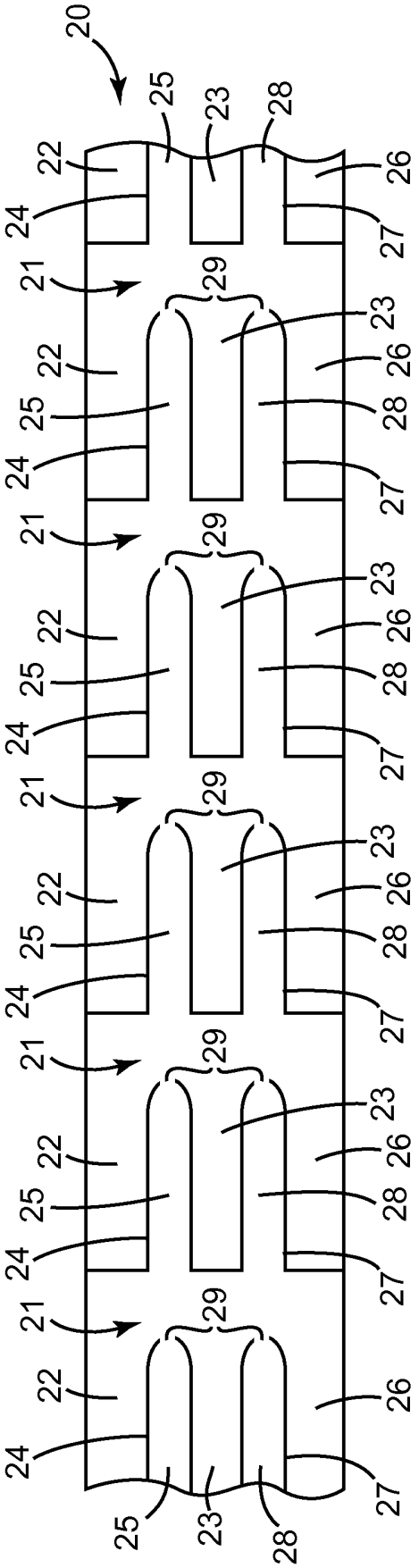

FIG. 5

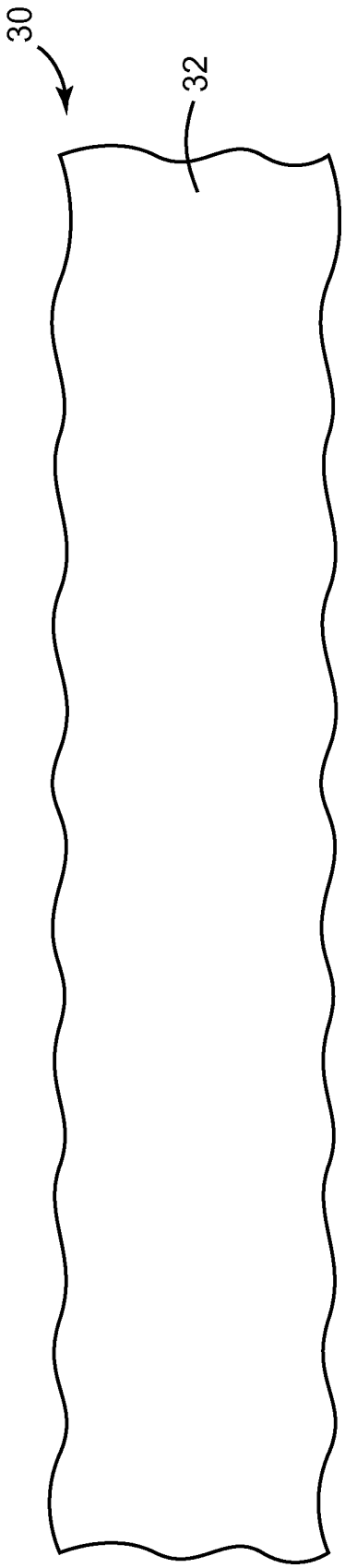

FIG. 6

FIG. 7

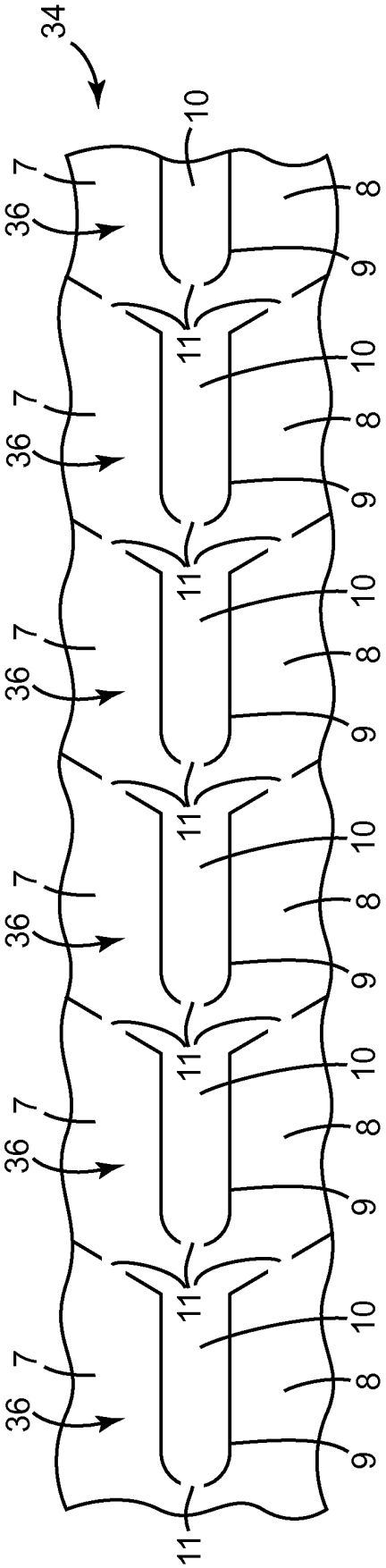

FIG. 8

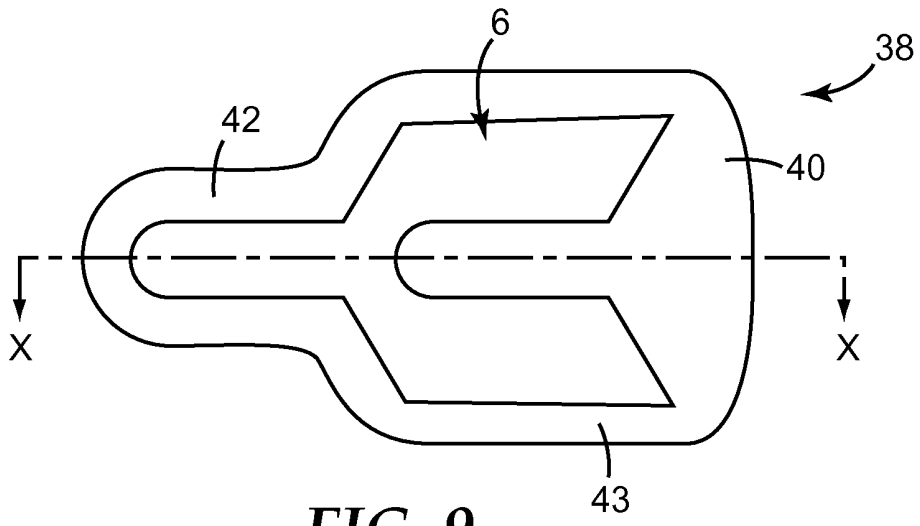

FIG. 9

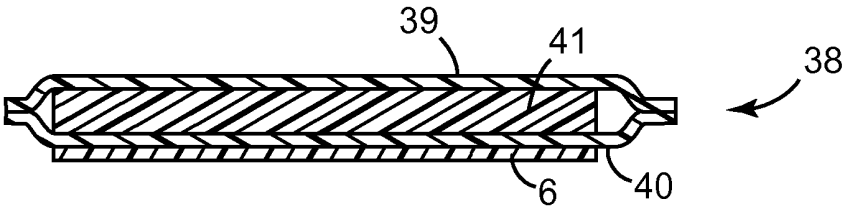

FIG. 10

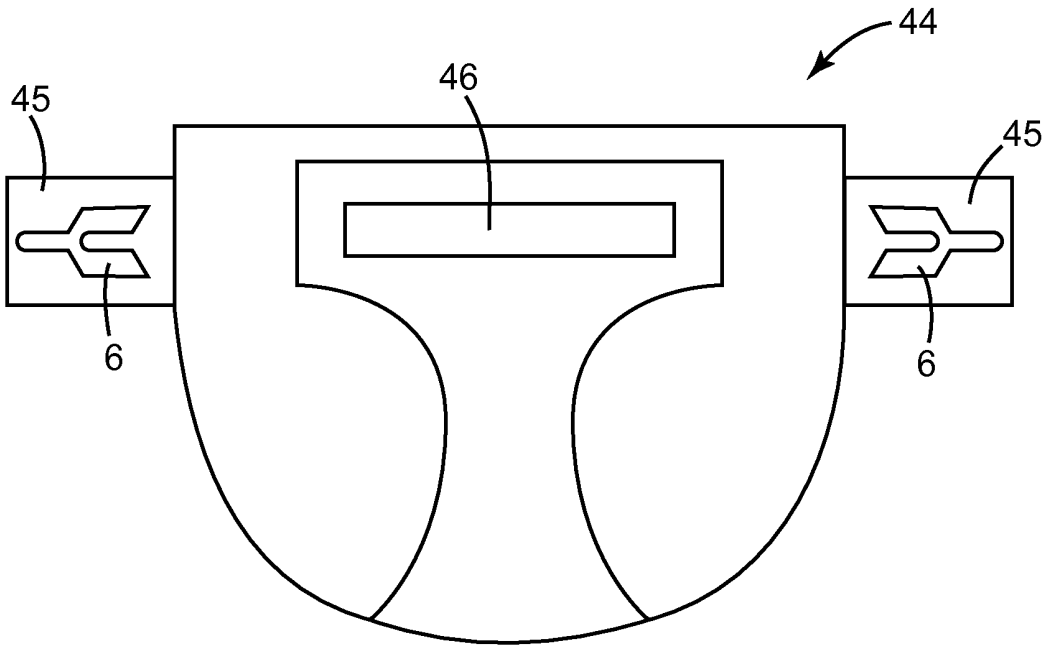

FIG. 11

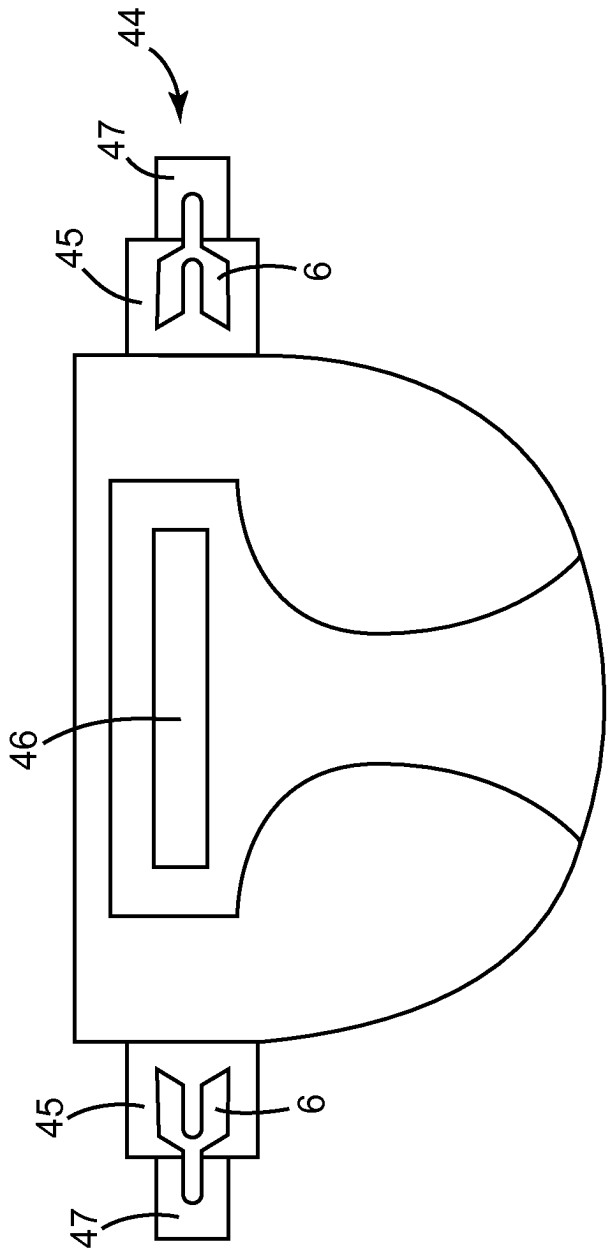

FIG. 12

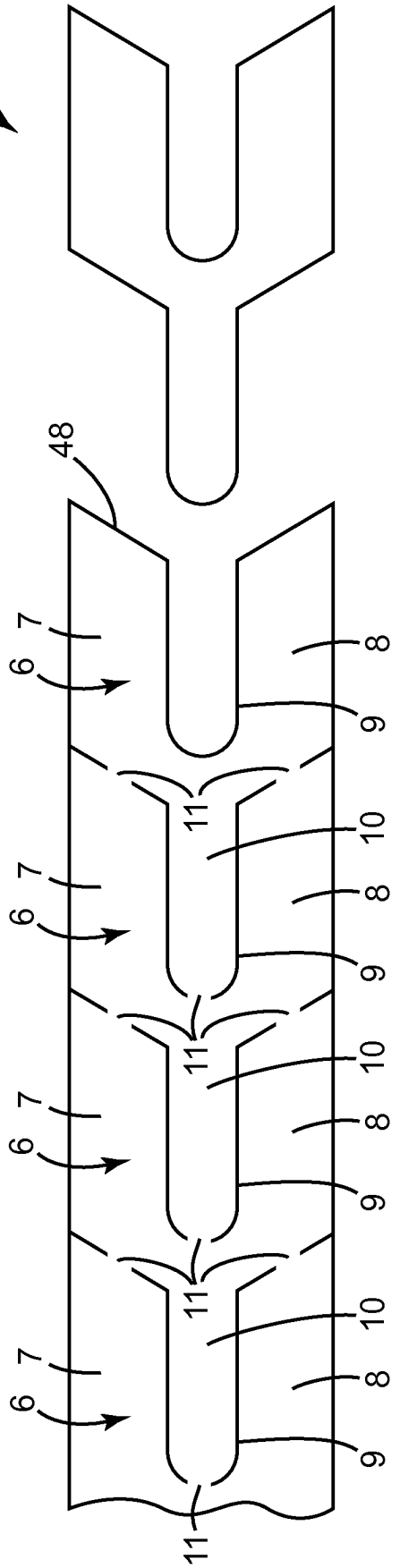

FIG. 13

REFERENCES CITED IN THE DESCRIPTION

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Patent documents cited in the description

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- WO 2012015025 A **[0003]**